

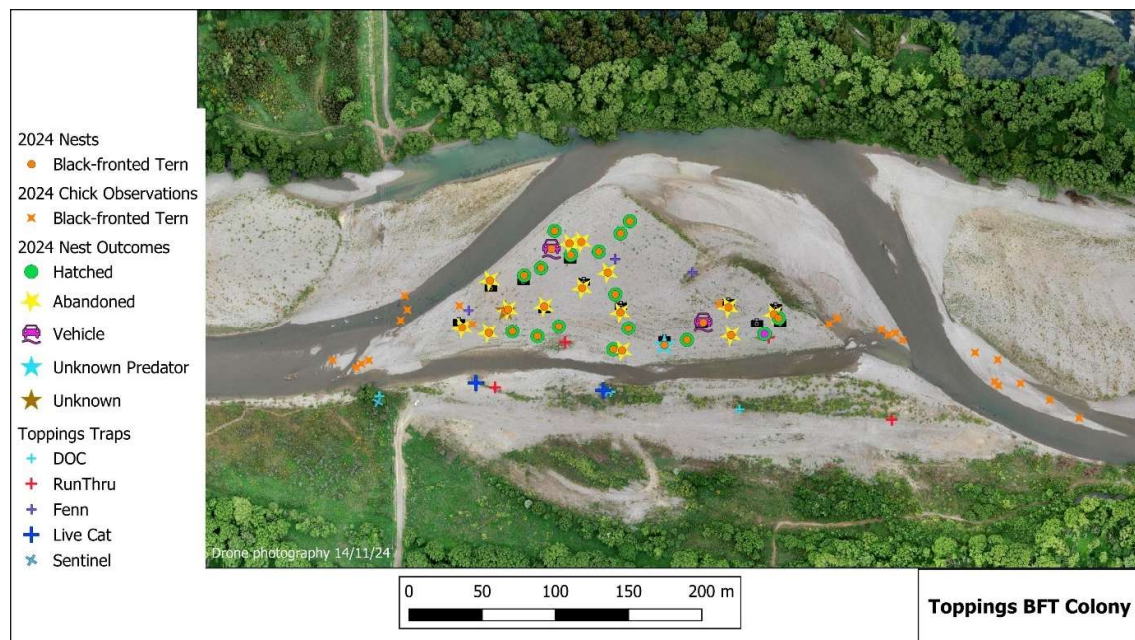
ARRG Operations Report for February 2025 Meeting

1. Nesting Season

Each year we attempt to protect and monitor three species – wrybill, black-fronted tern (BFT) and black-billed gull (BBG). This year no BBG nested in the section of river upstream from State Highway One and there was insufficient time to properly monitor the large colony that was made where the river met the estuary. We would like to be able to monitor banded dotterel (BD) nests but they are too difficult to find.

Most work was done on the BFT as they are the most endangered bird on the river and form large colonies. This year they had eight colonies in six different places – see map below. The first two colonies (Okuku Junction and Smarts) were wiped out by a small flood on 26 October and nesting began again later.

Monitoring consists of finding and checking nests generally three times a week at each colony. Trail cameras are very important – there were cameras at 106 different spots (mainly BFT nests) for a total of 946 camera nights to date. This is similar to the last few years. Most cameras were at BFT nests. In excess of 500,000 photographs were taken with the great majority stored for possible future study. At BFT colonies fledglings were counted on a number of visits with the most reliable count used. The map below shows an example of monitoring and trapping work at the Toppings colony. Fewer traps were used at Toppings than in other places as there simply wasn't a predator problem. Where possible, drone basemaps were used.

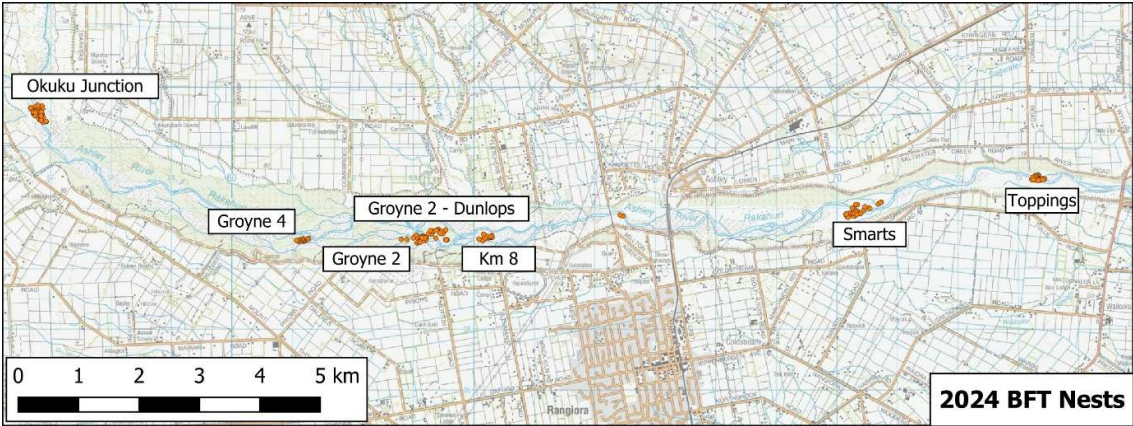


Trapping was done in conjunction with monitoring. There were traps at 163 sites for >5,100 trap nights to 3 February. There are still 14 traps on site. To put this in context, there were more temporary nest protecting trap nights this season than the average for the first 10 years of total ARRG trapping. This is similar to the situation since 2019.

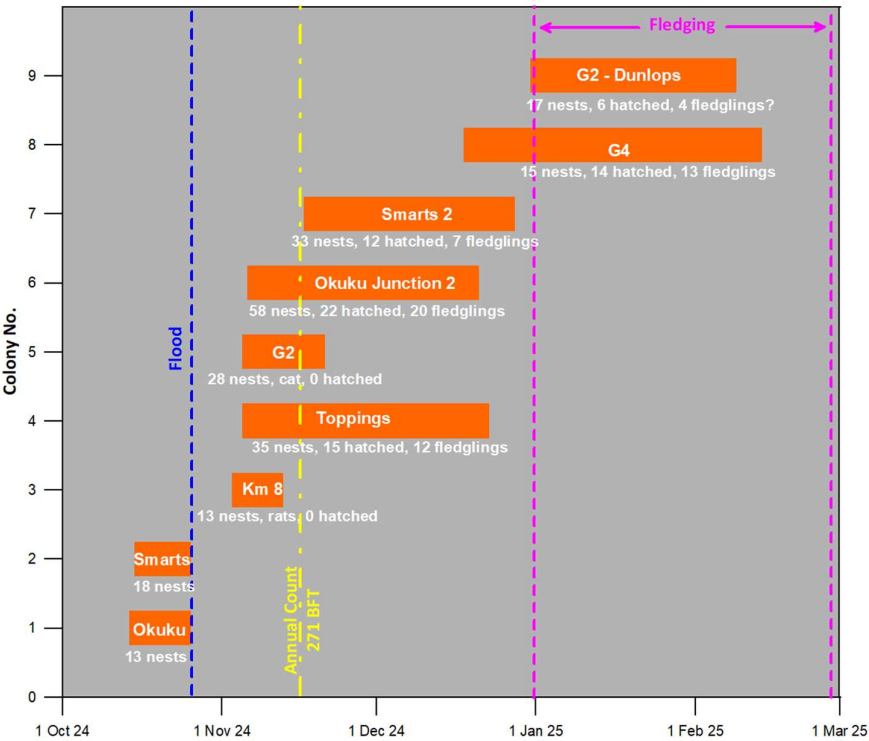
Black-fronted Terns

Locations of nests and colonies are shown below. It is entirely possible that small colonies or individual nests could have been missed in parts of the river which weren't often visited. In total 233

nests were found (228 in colonies), this compares to 157 last year. However last year there were about 70 nests (included in the 157) upstream from the Okuku junction in two sites which were not viable this year due to heavy weed cover.

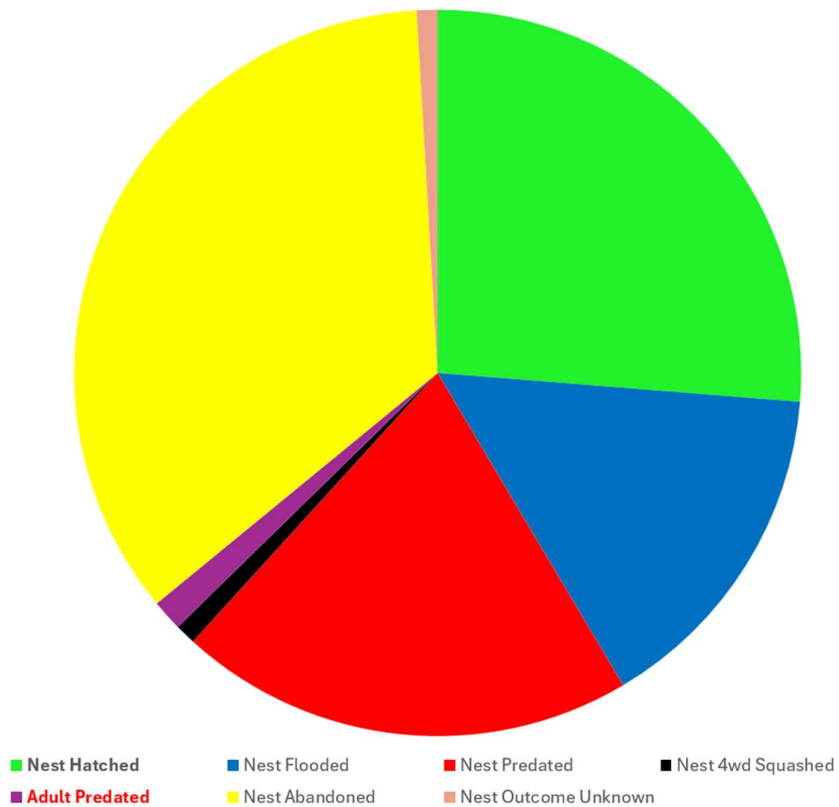


The graph below shows colony timing (first nest made to last hatched) and a summary of results. At Toppings and the second Okuku junction colony nesting seems to have taken place over a period of about 3 weeks. As of 3 February, the colony at G2 – Dunlops was still in progress – there were still chicks yet to fledge. The colony near Groyne 4 was only found when most chicks had fledged. It seems reasonable to suggest that the birds which lost their first nests at the Okuku junction and Smarts nested again elsewhere along the river. This may also be the case for the birds at Groyne 2 and Km 8 which quite quickly lost nests to a cat and rats respectively.

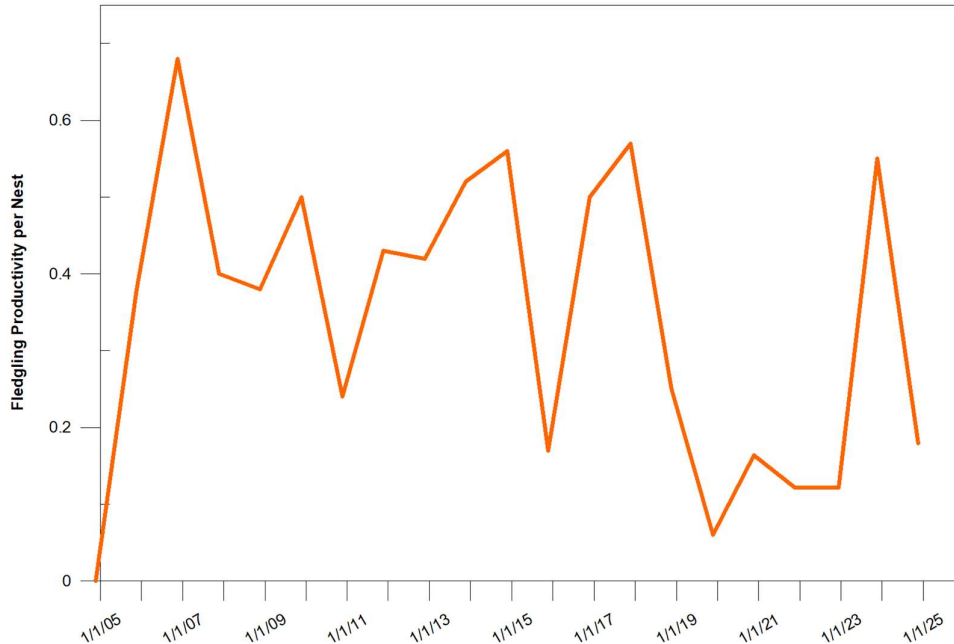


The next graph shows a summary outcome for the colony nests. Similar graphs can be made for the last few years for comparison. Comments follow.

2024 BFT Nest Outcome Summary



- Fifty-seven nests hatched for a success rate of 25%. Fifty-six fledglings were counted for success of 25% per nest. However, if the first Okuku junction and Smarts colonies and the Groyne 2 and Km 8 colonies are not included – fledging success would be 37% per postulated pair. The graph below shows fledgling productivity per nest over time without any adjustments made for re-nesting. It ought to be possible to fledge 1 chick per nest.



- The ratio of fledglings produced per nest with hatched eggs (usually 2 eggs per nest) was very high at nearly 100%. Obviously, most of the breeding problems for BFT this season were at the nest.
- This year BFT were their own worst enemy – the biggest problem was abandonment (76 nests). A cat was almost certainly the cause of the mass abandonment at Groyne 2 – no other predators were seen or caught and there was no nighttime and very little daytime disturbance. This cat was seen at several nests, it ate some eggs and killed at least one adult BFT. At Toppings some of the abandonment was almost certainly due to repeated hare visits and the statistics used in the graphs assume that all abandoned nests were caused by this – there did seem to be unusual hare activity. Several hares galloping through the colony area at night could cause large scale abandonment. In previous years hares have been by far the cause of most BFT disturbance along the river, but the great majority of birds usually return, often 6 or more hours later. Last season the Toppings colony produced 30 fledglings from about 38 nests.

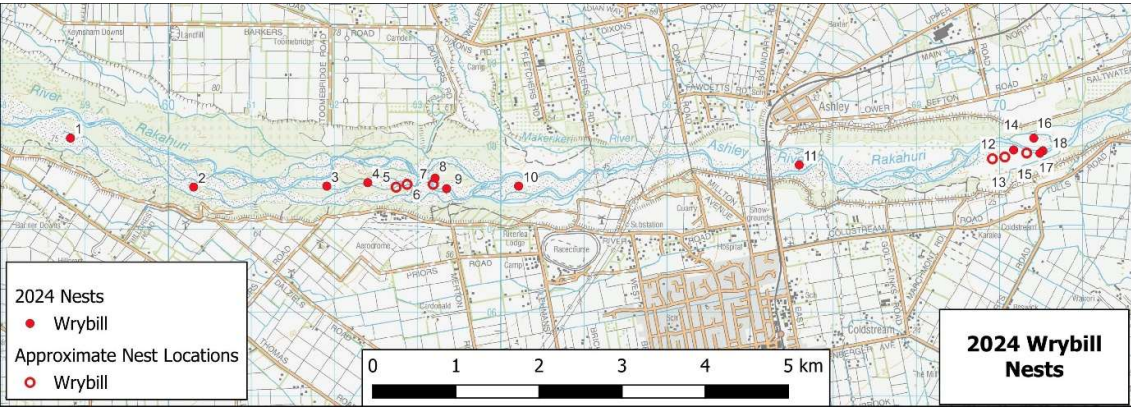
About a third of the abandonment was for no apparent reason – but perhaps later eggs had an infertility problem.

- The second biggest problem was predation, two nests with chicks killed by BBG are included in this. Two nests were also run over by 4wds, which is rare – but if 4wds drove around in a colony at night, all nests would probably be abandoned. Predation of eggs or chicks at 20 nests was attributed to cats with 12 to Norway rats. Cats were by far the biggest problem that we've ever seen. This was from a single cat at Smarts, two at the Okuku junction and probably one at Smarts. Only 2 rats took away the eggs at 12 nests at Km 8 over a couple of nights. Such small numbers of damaging predators could be seen as good or bad –
 - we should be easily able to catch so few animals, or:
 - how can we succeed if such small numbers of predators can cause the problems?
- The remains of 3 predated adult BFT were found at the Okuku junction, Groyne 2 and Smarts. Cats were the likely culprit and there were close-calls captured by trail cameras. This is more than usual, BFT on the nest usually escape cats. But in the past stoats have twice been seen to catch them on the nest.

- Flooding was the third biggest problem, but it happened on a significant scale just once early in the season. Last year there were no floods, the year before there were 2.
- The drying riverbed was also a problem – until water briefly dried out around the Smarts island there were no eggs lost or abandoned. A cat seemed to find the food source when the river dried, but photos of a very wet cat showed that when flow returned, it swam across. Nests on the island at the Okuku junction were safe from cats, but all nests were lost to a cat on the south side of the river and some on the north to a different one. Last season a cat was caught on the island.
- Causes of breeding failure encountered in the past, but not this year, include from stoats and hedgehogs. But in 5 years of quite extensive trail camera use, only a single hedgehog has been seen at a BFT nest – it sniffed and didn’t eat the eggs, but the bird did not return. Hedgehogs have not been seen to cross water and most BFT nest on islands. Stoat problems were seen only once in the last 5 years.
- As with last year, the majority of fledgling success was at colonies (Okuku junction and Toppings) where we don’t have permanent trap lines. **After 20 years of ARRG trapping the birds are better off nesting where we don’t trap than where we do.** Being able to show that nesting is better in trapped areas than in un-trapped would normally be prime evidence for the success of a trapping programme. For cats at least we may well be making the situation worse by our trap lines – the bait is a significant food source for mice which, from trail camera evidence, are a significant food source for cats.

Wrybill

The below map shows GPS located nests in solid red dots. Open dots show the approximate position of nests close to where chicks or adult behaviour that indicate chicks was seen. Numbers are ordered down the river. Nest 15, on Smarts island, may not have been there - a chick seen on a trail camera photo near here may possibly have moved downstream from nest 13 which must have been unusually close to nest 12.



The below table is a preliminary summary of results –

No.	Band	TC	Date Found	Hatched	Hatch Date	Fledged	Comment
1	KO??		24/10/2024	?		?	Nest found, not followed up

2	KOYR	Y	17/10/2024				Nest lost to 26 Oct flood. Bird did not re-nest
3	KOWG	Y	24/09/2024	Y	10/10/2024		Chicks left nest, not seen later. Bird seen several times, no indication of fledglings
4				Y		Y	Adult behaviour indicates fledged
5				Y		?	Adults seen in area late, no indication of chicks
6				Y		?	"
7	BWBW			Y		Y	First to hatch, first fledgling seen must have been BWBW chick
8	BWBW	Y	21/11/224				Eggs lost to cat
9	KOWY	Y	29/09/2024	Y	10/10/2024	Y	Chick seen to 14/12
10			30/09/2024	Y		Y	Adult behaviour indicates chick to 27/11
11			28/09/2024				Male killed by cat near nest
12				Y		Y	Two fledglings seen to 23/1, then one lost
13				Y			Seen 2/12, not later
14	KOYG	Y	2/10/2024	Y	10/10/2024	Y	Fledgling last seen 24/11 with KOYG
15				Y			Small chick seen on TC, but could be from nest 13
16	BRBR	Y	12/09/2024	Y	11/10/2024	Y	Two fledglings seen to 8/12
17			5/12/2024				Eggs predated by 12/12
18		Y	1/10/2024	Y	11/10/2024		Adult behaviour indicated chicks present for some time. But lost, re-nest to 17

Comments

- Hatching success was good – from the likely 18 nests 13 hatched, 1 may have. Two of these nests were second attempts which both failed – BWBW fledged a chick before nesting the second time and nest 17 was almost certainly a repeat by the pair at nest 18.

- A nest was lost to a flood, an adult male was killed by a cat then the nest abandoned, and the eggs of BWBW's second nest were eaten by a cat. Eggs were taken by an unknown predator at nest 17.
- Fledglings were interpreted to have been produced from 7 nests, but this may be an underestimation. Monitoring was insufficient to determine how many fledglings were produced, but BRBR did fledge 2 chicks.
- Wrybill are comparatively very successful at hatching chicks. But they are often lost to predators and monitoring has usually been insufficient to tell if fledglings survive to leave the river. It was clearly shown that a fledgling from nest 12 was lost when flow dried up along one side of an island where they were feeding. Fledglings seemed to disappear from the river early this year, sometimes leaving their parents behind.
- It seems highly likely that there were more nests along the river than were found. This would particularly be the case with late nests.

Other Species

This year some BBG nests were made at Groyne 2 and a few late ones at Smarts. But there was a major colony where the river meets the estuary off the end of Raupo Berm. About 1200 nests were counted from drone photos on 14 November. Very little monitoring was done here, but there is no reason to think nesting wasn't successful. After hatching chicks were moved eastward into the estuary. Some dead fledglings found on the sandspit were probably the result of natural deaths.

Very little attempt was made to monitor banded dotterel along the river, but 2 early nests were lost to harriers. Based on the number of chicks and fledglings seen along the river, their season appeared good. There is no reason to suspect that pied stilts and pied oystercatchers (SIPO) weren't successful.

At the estuary 3 BD nests were found on the sandspit, 1 hatched 3 chicks, one had eggs eaten by a black-backed gull and the other nest lost eggs to an unknown predator. Variable oystercatchers (VOC) seemed to be successful. Two nests were monitored with trail cameras. One of these hatched 3 chicks – which were seen almost at fledgling stage weeks later. A pair of a VOC and a hybrid VOC-SIPO hatched one of two eggs and fledged a chick.

ECan were again destroying SBBG nests around the estuary, but some chicks were hatched on the sandspit

2. Trapping

Nesting Season Trapping

Below is the catch to date from traps at nesting colonies –

Hedgehogs	Cats	Stoats	Norway Rats	Total
12	14	1	8	35

All hedgehogs were caught on the berm adjacent to colonies or on dried out riverbed adjacent to islands. Remarkably the biggest catch was of cats - this reflects the apparent increased cat numbers (at least at nesting colonies) and especially the much greater use of live capture traps.

Nine of the cats were caught in live capture traps vs the other 5 in kill traps – Timms, DOC 150 and Sentinel. Cat catch per hundred trap nights for live capture traps was 3.5, for Timms it was 0.21 and for Sentinel – 0.26. Live capture traps are checked more often and moved from site to site, so these numbers aren't directly comparable.

However, the cat that caused the damage at the Groyne 2 colony was only caught in a second phase of live trapping after all the BFT eggs had been predated or nests abandoned. And after the last remaining wrybill eggs, the second nest of BWBW's, had been predated by it. The cat that caused the damage on the south side of the second Okuku junction colony was only caught (in a kill trap) a few weeks after there was nothing left to eat that didn't involve a river crossing. The cat that did the predation and caused nest abandonment on the north side of the colony wasn't caught despite traps being in place for quite some time. This cat seemed to be just a temporary visitor as damage didn't last long. The cat that caused the damage at Smarts probably wasn't caught.

Nevertheless, it is clear that live capture traps are massively more effective than the kill traps we use – cats are very wary of such traps. But they need to be checked daily, feral animals need to be shot, and we don't have resources to do more. Live capture traps places where we know cats to be will be the best method.

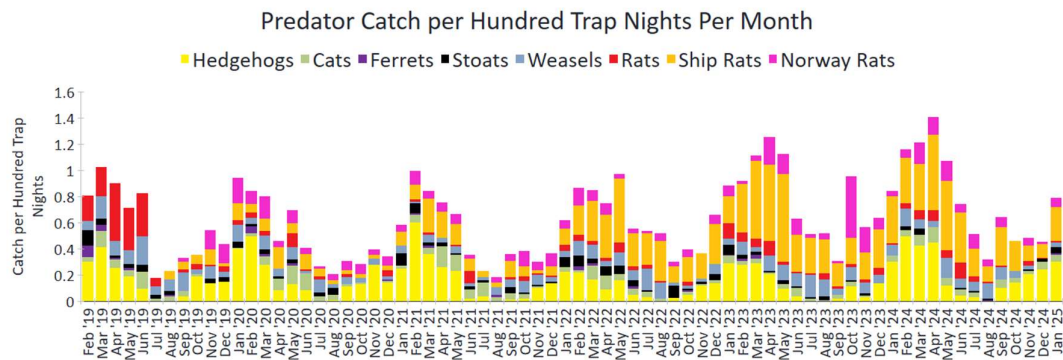
Norway rat kill was far less than in some recent years, partly reflecting the natural lack of rats where some of the colonies were, and the success in killing them in recent times – especially at Groyne 2. Norway rats were caught late in the season at the Okuku junction and at Smarts – but they didn't seem to have done any damage.

As per usual there was no evidence of ship rats, weasels or ferrets out on the fairway.

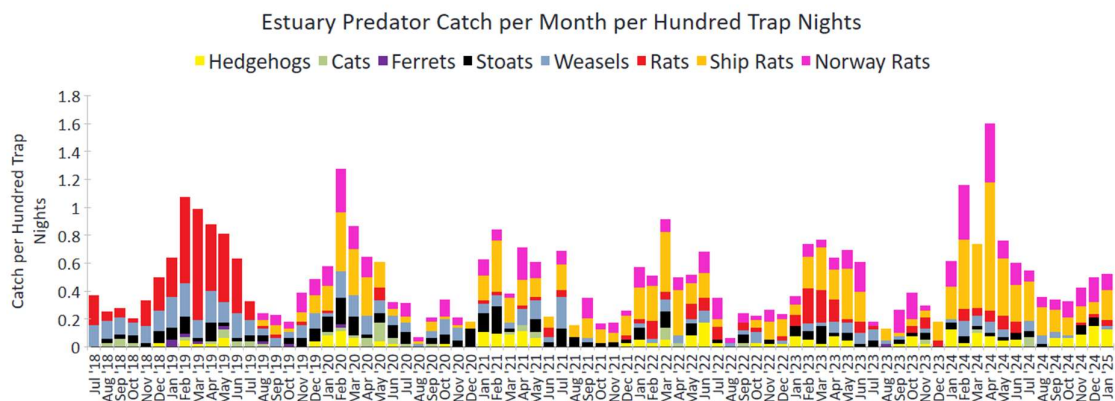
Permanent trap lines

In the last quarter catch in river and estuary trap lines have been very much as per usual. The graphs below include trap line and nesting season results.

River:



Estuary:



Two trap lines along the river no longer have trappers.

Pindone Bait Stations

These haven't been checked since the start of the nesting season. In the near future they will probably have to be taken out. They seemed to be successfully killing mice and nothing else.

3. Weeds

The weed clearing prior to this season was the most successful ever – all but two (Cones Road and Railway-Golf Links) of the larger areas cleared had BFT colonies.

However, without a sizeable flood before next season the weed problem will be quite extreme. We are applying for funding from Trustpower which would clear up to 50ha within 2km of their transmission lines. This would be by the Cressland tractor mounted machine or by grader. A grader will likely be necessary for much of the area as either the lupin will be too high, or there are weeds with shallow roots. Hopefully there will also be more funding from an ECan source.

ECan summer students were mapping seedling willow and poplar along active channels of the river. However, this wasn't entirely satisfactory and less than half of the work was completed. GD has been working on finishing it. This will give an accurate picture of the problem and the area which needs to be sprayed. In places these seedlings are now 1.5 to 2m tall. Some would be removed or covered up by large floods, but probably a lot would remain. This looks like a serious ongoing problem.

By far the worst problems seem to be in the G2 area where the river is widest and there are more braids. Here willow seedlings are much more abundant than poplar. The main willow species seems to be a form of purple willow, perhaps *Salix purpurea* 'Booth'. This is supposed to be a sterile female clone, but a tree has been found that has huge numbers of tiny seedlings under and near it – probably to more than 100 per square metre. There must be more of these trees, but ECan may have partly solved the problem already by the spraying they have been doing along parts of the northern berm.

Further downstream, from Cones Road, there is much more and an increasing amount of poplar going eastward. A local source of this isn't readily apparent, but some appears to be coming from the south bank above Groyne 3. Perhaps poplar seed travels further in the river than willow.

4. Fairway blocking and 4wds

Most of the blocks that restrict access to the fairway have been removed. This season there was little sign of 4wds on the river – with just the one incident at Toppings where several drove through a nesting colony and squashed 2 nests and a trail camera. Motorbikes and quadbikes were much more commonly seen, mainly on trail camera images.

5. Gravel extraction

Very little is happening, Screenworks have been trucking a small amount of gravel, mining none. There has been some activity further up the river.

6. Power lines

Some geotechnical work is being done on the banks at Smarts for the new Mainpower pylons.

7. Current bird situation

Along most of the river there are now very few birds. The exceptions are off G2 and Smarts where there are flocks of black-fronted terns, banded dotterels and pied stilts, and sometimes spur-winged plovers. This is the usual situation at this time of year, and before the nesting season. On 19 February there were still 2 wrybill at Smarts.

Grant Davey

19/2/25